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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,761	07/02/2001	Marcel F.C. Schemmann	US010310	2010

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EXAMINER	
TRAN, DZUNG D	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/896,761	SCHEMMANN ET AL.
	Examiner	Art Unit
	Dzung D Tran	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/07/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Objections

1. Claims 2 and 12 are objected to because of the following informalities:

Claim 2, line 2, has a typo error, "the firs input" should be change to "the first input". Appropriate correction is required.

Claim 12, line 3, "the second RF amplifier" should be change to "the first RF amplifier"

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation ""the encoded control signal" in line 3 of claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation ""the encoded control signal" in line 3 of claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-12 and 17-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Lemson US patent no. 5,457,811.

Regarding claim 1, Lemson discloses an apparatus for communicating radio frequency (RF) informational signals having a RF power level, through an optical link medium (figure 5), said apparatus comprising:

a first conductor (equivalent to system RF input) adapted to carry said informational signals as electrical signals into the apparatus;

a RF level sensor (equivalent to power detector/controller (42 of figure 5) having an input node at a splitter (supplied the RF signal to 43a) operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first RF attenuator (32 of figure 5) having a first input coupled to the input node (see figure 5), a second input (33 of figure 5) adapted to be operatively controlled by the control signal that is generated from power detector/controller (42 of figure 5), and adapted to attenuate the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 5);

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

Regarding claim 2, Lemson further discloses in figure 6, a first RF amplifier 24b between the input node at splitter 52a and the first input of the attenuator 32b adapted to be operatively controlled by the control signal, and adapted to amplify the electrical signals from the first conductor prior to being communicated through said optical link medium.

Regarding claim 3, Lemson further discloses a second RF attenuator 34 to attenuate the electrical signal on second conductor (system RF output) operatively coupled to the receiver (e.g. receiver comprising: photo-diode 22, RF pre-amp 28, control signal demodulator 46) and adapted to be operatively controlled by the control signal that is modulated by control signal modulator 44, transmits over the optical link 22.

Regarding claims 4 and 5, Lemson teaches the control device controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Regarding claim 6, Lemson further discloses a second RF attenuator 34 to attenuate the electrical signal on second conductor (system RF output) operatively coupled to the receiver (e.g. receiver comprising: photo-diode 22, RF pre-amp 28, control signal demodulator 46) and adapted to be operatively controlled by the control signal that is modulated by control signal modulator 44, transmits over the optical link 22 and further discloses the first and second signal level changing devices 32, 38 may

comprise both a variable attenuator and a gain controlled amplifier (col. 12, lines 44-46), thus it inherent that second signal level changing device comprise a second RF amplifier (does not show) and is controlled by the control signal.

Regarding claim 7, Lemson discloses the first and second signal level changing devices 32, 38 may comprise both a variable attenuator and a gain controlled amplifier (col. 12, lines 44-46), thus it inherent that second signal level changing device comprise a second RF amplifier (does not show) and is controlled by the control signal.

Regarding claims 8 and 9, Lemson teaches the control device controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Regarding claim 10, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a RF level sensor (equivalent to power detector/controller (42 of figure 5) having an input node at a splitter (supplied the RF signal to 43a) operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first RF attenuator (32 of figure 5) having a first input coupled to the input node (see figure 5), a second input (33 of figure 5) adapted to be operatively controlled by the control signal that is generated from power detector/controller (42 of figure 5), and

adapted to attenuate the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 5).

Regarding claim 11, Lemson discloses the sensor output is adapted to be transmitted to RF receiver (see figure 5).

Regarding claim 12, as far as examiner understood), Lemson discloses the first and second signal level changing devices 32, 38 may comprise both a variable attenuator and a gain controlled amplifier (col. 12, lines 44-46), thus it inherent that second signal level changing device comprise a second RF amplifier (does not show) and is controlled by the control signal.

Regarding claim 17, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

RF stabilization system having the control device 42 controls the first and second signal level changing devices 32, 38 in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) where the first signal level changing devices 32 is connected to the transmitter and second signal level changing devices 38 is connected to the receiver.

Regarding claim 18, Lemson teaches the control device controls the first and second signal level changing devices 32, 38 in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the setting of the first and second signal level changing devices should be adequate for some system (col. 17, lines 59-65).

Regarding claim 19, Lemson further discloses the transmission links can includes, e.g. , typical RF transmission links, fiber optical links, free space optical links, radio wave transmission links, and any combination of above elements which is inherent that the system can be a cable television (CATV) system (see col. 10, lines 17-21 of Lemson, page 1, lines 11-13 of specification).

Regarding claim 20, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a RF level sensor (equivalent to power detector/controller (42 of figure 5) having an input node at a splitter (supplied the RF signal to 43a) operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first RF attenuator (32 of figure 5) having a first input coupled to the input node (see figure 5), a second input (33 of figure 5) adapted to be operatively controlled by the control signal that is generated from power detector/controller (42 of figure 5), and adapted to attenuate the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 5). Lemson further discloses in figure 6, a first RF amplifier 24b between the input node at splitter 52a and

the first input of the attenuator 32b adapted to be operatively controlled by the control signal, and adapted to amplify the electrical signals from the first conductor prior to being communicated through said optical link medium and the control device 42 controls the gain amplifier and the attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) which inherent that control devices able to adjust the amplifying level of the gain controlled amplifier or adjust the attenuation of the variable attenuator at any level.

Regarding claim 21, Lemson discloses a method for enhancing the dynamic range of an optical transmission system (abstract), the method comprising:

a RF level sensor (equivalent to power detector/controller (42 of figure 5)) for measuring a first RF power level of the RF electronic signals to be transmitted;

a first signal level changing devices 32 for transforming the RF electronic signal and outputting the RF electronic signals within 0.5 dB of the first RF level (col. 17, lines 59-65).

Regarding claim 22, Lemson discloses the noise power ratio of the transmitted RF electronic signal is greater than it would be if transforming has not been perform (col. 18, lines 38-52).

Regarding claim 23, Lemson discloses when the transforming is attenuating; the transformed RF power level is less than the first RF power level (col. 17, lines 43-54).

Regarding claim 24, Lemson discloses when the transforming is amplifying; the transformed RF power level is greater than the first RF power level (col. 21, lines 54-64).

Regarding claim 25, Lemson further discloses the transmission links can includes, e.g. , typical RF transmission links, fiber optical links, free space optical links, radio wave transmission links, and any combination of above elements which is inherent that the system can be a cable television (CATV) system (see col. 10, lines 17-21 of Lemson, page 1, lines 11-13 of specification).

Regarding claim 26, Lemson discloses an apparatus for communicating radio frequency (RF) informational signals having a RF power level, through an optical link medium (figure 5), said apparatus comprising:

a first conductor (equivalent to system RF input) adapted to carry said informational signals as electrical signals into the apparatus;

a RF level sensor (equivalent to power detector/controller (42 of figure 5) having an input node at a splitter (supplied the RF signal to 43a) operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first RF attenuator (32 of figure 5) having a first input coupled to the input node (see figure 5), a second input (33 of figure 5) adapted to be operatively controlled by the control signal that is generated from power detector/controller (42 of figure 5), and adapted to attenuate the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 5);

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

a control device 42 controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemson US patent no. 5,457,811.

Regarding claims 13-16, Lemson teaches the control device 42 controls the first and second signal level changing devices 32, 38 (e.g. each of the first and second signal level changing device comprises both a variable attenuator and a gain controlled amplifier, see col. 12, lies 46-47) in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54), Lemson further

teaches control device 42 send a control signal to adjust the gain controlled amplifier and 32', 34' and the variable attenuator 32, 34 (see col. 22, line 60 to col. 23, line13). Thus, if it is not inherent it would have obvious that control devices 42 able to adjust the amplifying level of the gain controlled amplifier 32', 34' or adjust the attenuation of the variable attenuator 32, 34 at any power level (e.g. the magnitude of the amplification performed by the second RF amplifier is approximately the same as the magnitude of the attenuation performed by the first RF attenuator (claim 13) or the amplification perform by the first RF varies inversely with the sensor output (claim 14) or the attenuation performed by the second attenuator varies inversely with the sensor output (claim 15) or the magnitude of the attenuation performed by the second RF attenuator is approximately the same as the magnitude of the amplification performed by the first RF attenuator (claim 16). This supporting rational is based on a recognition that the claimed difference exist not as a result of an attempt by applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Response to Arguments

7. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DT
02/25/2005

Dzung Tran